

## CLAIMS

### WHAT IS CLAIMED IS:

1. A plurality of panels for dispensing cylindrical articles, each of said panels comprising:
  - (a) at least one set of rails extending laterally from the sides of said panels, said rails defining a plurality of chutes therebetween for said cylindrical articles;
  - (b) a first rail disposed in the generally medial portion of said side and having a configuration angled generally downwardly;
  - (c) a second rail disposed about the first rail and having a substantially curvilinear configuration;
  - (d) a first stop formed at the lowest extent of said second rail constructed and arranged to engage such cylindrical articles so as to prevent unwanted movement and position such cylindrical articles for viewing in the lower end of said first chute;
  - (e) a third rail having a substantially curvilinear configuration; and
  - (f) a second stop formed at a lower end of said second rail for engaging said cylindrical articles so as to prevent unwanted movement and position said cylindrical articles for viewing at the lower end of said second chute.
2. The panel of claim 1 and further comprising: a plurality of retention pin members constructed and arranged to selectively interlock each

of said panels to a second panel so as to fixedly position said panels relative to each other.

3. A dispenser and display rack for substantially cylindrical articles, said dispenser comprising:

(a) a plurality of vertically disposed panels, each of said panels having one or more rails extending horizontally therefrom toward an opposing vertical panel, said rails defining a plurality of chutes therebetween, said chutes being slightly greater in width than said cylindrical articles so as to allow said cylindrical articles to be stored therein and dispensed therefrom;

(b) said chutes further being slightly inclined so as to allow said cylindrical articles to be advanced by means of gravity from an upper position on said panel in said chutes to a lower portion position on said panels in said chutes;

(c) a removal area disposed proximate said lower portion of said chutes for allowing selective removal of one or more of the cylindrical articles from said dispenser; and

(d) an access door movable between first and second positions, said access door being mounted proximate said upper portion, said access door being constructed and arranged for closing the upper portion of said chutes in the first position and for opening the upper portion of said chutes in the second position, said access door further having a front face for advertising display purposes.

4. The dispenser of claim 3 and further comprising: a plurality of retention pin members constructed and arranged to selectively interlock each of said vertical panels to the opposing vertical panel so as to fixedly position said panels relative to each other.

5. The dispenser of claim 4 wherein said retention pins are substantially U-shaped and wherein each of said panels has a plurality of bores formed therein for reception of and attachment of said retention pins to said panels so as to selectively maintain said panels in a fixed position parallel to the opposite panel.

6. The dispenser of claim 4 wherein said panels further comprise a plurality of bosses formed proximate each corner of said panel, each of said bosses having an aperture defined therein and a lock mechanism associated with said aperture so as to allow selective locking and unlocking of said retention pins relative to such panel.

7. The dispenser of claim 6 wherein said locking mechanism comprises a receptacle formed in the outer wall of said boss wherein, in the first position said retention pin is engaged both horizontally and vertically so as to prevent rotation of said panels and wherein said retention pin when partially removed from said boss and partially removed from said aperture is engaged horizontally but not vertically so as to allow rotation of said retention pin in said aperture, thereby allowing such panels to be advanced toward to or

separated from each other until they are in abutment or until said retention pins are fully extended.

8. The dispenser of said device of claim 4 where a plurality of said panels may be interconnected by said retention pins and may be compressed together into contact with other so as to facilitate shipping, storage and installation of said dispensing device.

9. The dispensing device of claim 5 wherein said panel comprises a plurality of cut out portions formed therein between said rails so as to provide structural rigidity to said panel and also to provide visibility of said cylindrical articles.

10. A dispensing and display device for cylindrical articles comprising:  
a pair of vertical panels and a pair of serpentine chutes formed therebetween, said chutes being inclined relative to horizontal whereby cylindrical articles contained therein may be advanced by gravity towards the lower portion of said display device, said first and second chute comprising a substantially C-shaped configuration; said chutes each having an upper portion and a lower portion;

a first stop means proximate to the lower portion of said first chute for preventing further downward motion of said cylindrical articles in said first chute;

a second stop means formed proximate the lower portion of said second chute for preventing further downward motion of said cylindrical articles in said second chute; and

a return area located proximate said first and second chute for allowing replacement of one of said cylindrical articles on said display device after removal from said chutes.

11. The display device of claim 10 where said return area comprises a cradle located proximate the distal end of first and second chutes for allowing retention of one or more cylindrical articles after replacement of said cylindrical article said chutes.

12. The dispensing and display device of claim 10 wherein said chutes further comprise a first bay area proximate the distal end of said first chute for allowing selective removal of said cylindrical article; and

a second bay area proximate the distal end of said second chute for allowing selective removal of said cylindrical article from said second chute.

13. The display device of claim 12 wherein said first bay area is located above said second bay and is offset relative thereto.

14. The display device of claim 10 and further comprising a plurality of retention pins having a plurality of lengths so as to allow construction of said dispensing device in a plurality of selected widths substantially corresponding to the height of said cylindrical articles.

15. The display device of claim 14 and further comprising clip means attached to the rear face of an access door for selective attachment of said access door to one of said retention pins.

16. The display device of claim 15 wherein said clip means are disposed on the rear face of said access door proximate the lower end of thereof and are pivotally connected to said retention pin so as to allow pivotable movement of said access door away from upper extents of said first and second chutes, thereby allowing selected filling of said chutes with said cylindrical articles.

17. The display device of claim 15 wherein said clip means comprise an integrally molded channel formed in said access door on the rear face thereof for reception of said retention pins.

18. The dispensing and display device of claim 3 wherein said access door further includes a pair of resilient arms laterally disposed thereon proximate the upper portion of said access door, said resilient arms having a pair of nubs outwardly disposed thereon, said nubs being constructed and arranged for snap locking into corresponding apertures in said panels.

19. A system for dispensing cylindrical articles, said system comprising a pair of vertical panels having a plurality of chutes horizontally disposed therebetween, said chutes each having an upper loading end and a

lower dispensing end, said dispensing end of said first chute being disposed substantially above said dispensing end of said second chute.

20. The system of claim 19 and further comprising a cradle member disposed proximate said dispensing ends of said first and second chutes, said cradle member being configured for reception of and retention of one at least one of said cylindrical articles, so as to allow return of said cylindrical articles to said dispensing system by the user, as required.

21. The system for dispensing cylindrical articles of claim 19 and further comprising magazine means for simultaneously loading said first and second chutes through said loading ends thereof, said magazine means comprising:

an overwrap for retention of a plurality of said cylindrical articles, and  
opening means for opening at least a portion of said overwrap so as to allow selective gravity feeding of said cylindrical articles from said overwrap to said loading ends of said first and second chutes.

22. The dispensing system of claim 19 and further comprising:  
access door members selectively attachable to and removable from said first and second loading ends of said first and second chutes, said access door members having displayed thereon alphanumeric and graphic indicia of the material contained within said cylindrical articles.

23. The dispensing apparatus of claim 22 and further comprising a hinge member attached to said access door for allowing selective pivoting of said access door over said loading ends of said chutes so as to allow dispensing of said cylindrical articles into said chutes, as required.

24. A method for dispensing cylindrical articles into a dispenser and display rack having a loading end thereon, said dispenser display utilizing a loading magazine containing a plurality of rows of parallel goods contained therein by an enclosing force, said method comprising the steps of:

- (a) removing said enclosing force at at least end of said loading magazine;
- (b) positioning said open end of said loading magazine proximate the loading end of said dispenser display;
- (c) feeding said cylindrical articles from said loading magazine into said dispenser display using gravity to dispense said cylindrical articles from said loading magazine;
- (d) advancing said cylindrical articles through said dispenser display using gravity feed; and
- (e) stopping the feeding of said cylindrical articles in a plurality of dispensing bays, as required.

25. The method of claim 24 and further comprising:  
returning at least one of said cylindrical articles to said dispenser display proximate said dispensing bay while at the same time maintaining the

remainder of said cylindrical articles in said dispenser display in their initial position prior to the return of at least one of said cylindrical articles.

26. The display panel of claim 3 and further comprising:

an access door having a plurality of tabs extending laterally therefrom and a plurality of tab apertures disposed on said panel, said tab apertures being positioned for reception of said tabs so as to retain said access door on said panel, said access door having alphanumeric and graphic indicia thereon for indicating selective information concerning the material in said cylindrical containers.

27. A method of loading cylindrical articles into an multi-chute gravity feed dispenser display having a plurality of gravity feed dispensing chutes therein, each of said chutes having a loading end and a dispensing end, said method comprising the steps;

positioning pairs of said cylindrical articles in loading ends of said chutes simultaneously from a loading magazine proximate the loading end of said dispenser display and loading the cylindrical articles from said loading magazine.

28. The dispensing and display device of claim 10 wherein the second chute is formed in such a manner as to promote the movement of said cylindrical articles in said second chute in a direction away from the second stop means when a minimum quantity of said cylindrical articles in said second chute is reached.

29. A plurality of panels for dispensing cylindrical articles, each of said panels comprising: at least one set of rails extending laterally from the sides of said panels, said panels defining a plurality of chutes therebetween for said cylindrical articles, said chutes being boustrophedonic in configuration.

30. A plurality of panels for dispensing cylindrical articles, said panels each comprising:

at least one set of rails extending normally from one side of the panel, and defining a plurality of chutes between said panels for said cylindrical articles, said chutes being serpentine in configuration and angling downwardly so as to feed said cylindrical articles downwardly through said chutes, a second of one of said chutes extending from proximate the upper portion of said panel downwardly to dispense said cylindrical articles in an area proximate the lower portion of said panels; and

a first chute extending generally downwardly in a serpentine manner being of shorter length than said second chute.

31. The panels of claim 30 wherein a multiplicity of said panels are provided and said panels comprise means for expanding and retracting in an accordion-type manner relative to each other.

32. The display device of claim 10 wherein said return area is located proximate the first stop means and proximate the first and second cylindrical articles disposed at the lower portion of said second chute.

33. The display device of claim 11 wherein said cradle comprises a raised portion on each of said vertical panels proximate the lower portion of said second chute and offset from said distal end of second chute so as to allow retention of one or more cylindrical articles on top of and above said cylindrical articles disposed in said second chute.

34. The dispensing device of claim 10 wherein said vertical panels are injected molded of thermoplastic resin so as to provide structurally rigidity and a low coefficient of friction against said cylindrical articles when dispensed through such chutes.

35. The dispensing device of claim 10 wherein said second chute contains sufficient space to hold a substantially greater number of cylindrical articles than said first chute.

36. The dispensing device of claim 10 wherein said vertical panels each comprise a plurality of feet disposed on the lower portion surface thereof for supporting and leveling said dispensing device, as required.

37. The dispensing device of claim 6 wherein a plurality of said bosses are formed on said dispensing device including at least one boss on each corner of the top and lower portion of each vertical panel proximate the front of said vertical panel and a second pair of bosses proximate the rear of said vertical panel.

38. The dispensing device of claim 37 and further comprising at least a pair of bosses generally medially disposed proximate the front, the rear, the top and the lower portion of said dispensing device so as to provide greater rigidity.

39. The dispensing device of claim 3 whereas said access door is injected molding of a thermoplastic resin and has a plurality of resilient arms extending normally from the edges thereof, said resilient arms having protrusions extending therefrom adapted for selective interlocking with slots formed in said panel proximate said chutes so as to selectively retain said access door over said chute, as required.

40. The dispensing device of claim 33 wherein said access door has a handle extending therefrom for facilitating opening and closing of said access door over said top portion of said chute.

41. A dispensing device and display rack for cylindrical articles comprising a plurality of serpentine chutes extending generally downwardly from the top of said dispensing device to the lower portion of said dispensing device and having a loading area proximate the top thereof and a dispensing area proximate the lower portion thereof, said dispensing device including an access door mounted proximate the top of said chutes, said access door being constructed and arranged for selectively opening or closing the upper portion of said chutes and for indicating the type of cylindrical article to be contained within said chutes.

42. The dispensing device of claim 3 wherein each of said chutes has a stop means for preventing unwanted movement of said cylindrical articles, said stop means comprising an incline portion proximate the distal end of said chutes, a flat front out portion and a substantially vertical end stop proximate the end of said chute.

43. A loading magazine for dispensing multiple units of cylindrical articles, said loading magazine comprising an overwrap having a perforated strip formed thereon for selectively removing a portion of said over wrap so as to allow said cylindrical articles to be manually ejected from said loading magazine.

44. The loading magazine of claim 43 wherein said overwrap comprises a plurality of holes for affixing alphanumeric indicia to said cylindrical articles, an overlap seam on said loading magazine for retaining said loading magazine in a wrapped configuration around said cylindrical articles, said overlap seam having an adhesive strip thereon for affixation and retention of said overlap seam on said loading magazine; and pull tab means for initiating removal of said perforated strip from said loading magazine.

45. The loading magazine of claim 43 wherein at least one row of said cylindrical articles containing at least two of said cylindrical articles in each row are retained within said overwrap.

46. The loading magazine of claim 44, wherein said overwrap comprises a kraft liner between 32 and 90 pounds.

47. A wrapper for packaging cylindrical articles comprising an overwrap formed as a tube having at least one of the longitudinal edges of said paper overlapped and glued to said overwrap with said cylindrical articles being vertically disposed in parallel therein, said overwrap being tightly wrapped around said cylindrical articles; and a tear strip formed in said overwrap longitudinally disposed thereon for allowing selective manual release of said overwrap proximate a first end thereof, thereby allowing manual ejection of said cylindrical articles from said overwrap in parallel to each other.

48. The wrapper of claim 47 and further comprising a series of longitudinally disposed apertures proximate the lateral edges of said overwrap when wrapped around said cylindrical articles, said apertures being constructed and arranged for reception of and retention of said cylindrical articles in said overwrap.

49. The overwrap of 47 and further comprising front and rear end folds disposed at the proximal and distal end of said overwrap for selectively retaining said cylindrical articles within said overwrap.

50. The overwrap of claim 49 wherein said end folds cover substantially all of said front and rear portion of said overwrap when disposed on said cylindrical articles.

51. The overwrap of claim 49 wherein said overwrap is constructed of paperboard having a caliper range between .012 and .026 and having a weight per 1,000 square feet of between 48 pounds and 90 pounds.

52. The overwrap of claim 47 wherein said tear strip extends along substantially the entire length of one side of said overwrap.

53. The overwrap of claim 52 wherein said paperboard comprises solid bleached sulfate.

54. The overwrap of claim 47 wherein said overwrap comprises thermoplastic film.

55. The overwrap of claim 47 wherein said tear strip comprises a perforated portion of said overwrap.

56. A method of packaging canned products for loading into a dispenser and display rack having upper and lower loading ports which comprises:

arranging the canned products in a double row, transversely aligned pairs; and

enclosing a group of the products in a overwrap forming a loading magazine, having a tear strip disposed thereon along its periphery so as to create a removable portion of said overwrap from the remaining carrying portion of said loading magazine, said overwrap being sized, constructed and

arranged for feeding said canned products in pairs into said loading ports when the removable portion is removed from said overwrap.

57. The method of claim 56 and further comprising :

attaching a first longitudinal edge of said overwrap to an oppositely disposed panel of said overwrap so as to retain said canned products within said wrapper.

58. The method of claim 56 and further comprising:

removing said removable portion of said overwrap;

aligning said double row of canned products with said loading ports; and feeding said canned products in pairs into said loading ports.

59. The method of claim 56 wherein said overwrap includes a first closure element and a first closure receiving element and said method further comprises:

attaching said first closure element of said overwrap to said first closure receiving element so as to restrain said product container within said overwrap.

60. The method of claim 56 wherein said overwrap includes first and second closure elements and first and second closure receiving elements; said method further comprising the steps of:

interlocking said first closure element of said first closure receiving element; and

interlocking said second closure element to said second closure receiving element, so as to retain said canned products within said wrapper.

61. A method of packaging canned products for loading into a dispenser and display rack, said method comprising:

arranging the canned products in a row; and  
enclosing a group of the products in a overwrap forming a loading magazine having a tear strip disposed thereon along its periphery so as to create a removable portion of said overwrap from the remaining carrying portion of said loading magazine, said overwrap being sized, constructed and arranged for feeding said canned products when said removable portion is removed from said overwrap.

62. A method of packaging substantially cylindrical products for loading into a dispenser and display rack having upper and lower loading ports which comprises:

arranging the substantially cylindrical products in a double row of transversely aligned pairs; and

enclosing a group of the products in a overwrap forming a loading magazine, having a tear strip disposed thereon along its periphery so as to create a removable portion of said overwrap from the remaining carrying portion of said loading magazine, said overwrap being sized, constructed and arranged for feeding said substantially cylindrical products in pairs into said loading ports when removable portion is removed from said overwrap.

63. The method of claim 62 and further comprising:  
attaching a first longitudinal edge of said overwrap to an oppositely  
disposed panel of said overwrap so as to retain said product containers within  
said overwrap.

64. The method of claim 62 and further comprising:  
removing said removable portion of said overwrap;  
aligning said double row of products with said loading ports; and  
feeding said product container in pairs into said loading ports.

65. The method of claim 62 wherein said overwrap includes a first  
closure element and a first closure receiving element and said method further  
comprises:

attaching said first closure element of said overwrap to said first closure  
receiving element so as to restrain said product container within said overwrap.

66. The method of claim 62 wherein said overwrap includes first and  
second closure elements and first and second closure receiving elements; said  
method further comprising the steps of:

interlocking said first closure element of said first closure receiving  
element; and

interlocking said second closure element to said second closure receiving  
element, so as to retain said substantially cylindrical products within said  
overwrap.

67. A method of packaging substantially cylindrical products for loading into a dispenser and display rack, said method comprising:

arranging the substantially cylindrical products in a row; and enclosing a group of the products in an overwrap forming a loading magazine having a tear strip disposed thereon circumferentially about its periphery so as to create a removable portion of said overwrap from the remaining carrying portion of said loading magazine, said overwrap being sized, constructed and arranged for feeding said substantially cylindrical products when said removable portion is removed from said overwrap.

68. The method of claim 56 wherein said tear strip comprises a series of perforations in said overwrap, and said method comprises the additional step of:

fracturing said perforations so as to enable removal of said removable portion of said wrapper.

69. The method of claim 56 wherein said step of feeding said product from said overwrap comprises:

expelling said product from said wrapper.

70. The method of claim 56 wherein said step of feeding said product from said wrapper comprises:

rolling said product out of said wrapper.

71. A dispenser and display rack system for storing and displaying cylindrically shaped products of common longitudinal dimension on store shelving, said system comprising a display module and a door, said display module including a pair of side panels disposed in spaced-apart side-by-side relation, rails affixed to said panels forming at least one product rail chute disposed between said panels, each said chute being of transverse dimension slightly greater than said longitudinal dimension and having a loading end, a dispensing end and elongated product travel path descending at least substantially full length from said loading end to said dispensing end, said door being moveable from a closed position wherein said door is disposed transversely between said panels above said dispensing end in access closing relation to said loading end, to a removed position in access opening relation to said loading end.

72. A system in accordance with claim 71 wherein said rail form a plurality of rails chutes and wherein said display module has an open front region between said walls, said open front region having an upper section and a lower section.

73. A system in accordance with claim 71, there being first and second rail chutes, the loading end of the first of said chutes being located at said upper section and disposed above the loading end of the second of said chutes, the discharge end of the first of said chutes being located at said lower section and disposed below the discharge end of the second of said chutes.

74. A system in accordance with claim 73, said door being sized to simultaneously open and close access at said upper section to the loading end of each of said chutes.

75. A system in accordance with claim 73 wherein said display module further includes product travel stops proximal the discharge end of each of said chutes.

76. A system in accordance with claim 75 wherein said product stops are offset from each other with respect to the horizontal a sufficient distance to permit placement of a product atop and between adjacent products disposed at the discharge end of the first of said chutes.

77. A system in accordance with claim 76 wherein the discharge end of the second of said chutes is disposed above the discharge end of the first of said chutes a distance slightly greater than the diameter of the products.

78. A system in accordance with claim 73 wherein said travel path of each of said chutes is generally C-shaped.

79. A system in accordance with claim 71 wherein said display module includes a plurality of retention pins connecting said walls.

80. A system in accordance with claim 79 wherein said door is connected to one of said retention pins for pivotal movement to thereby open and close access to said loading end.

81. A dispenser and display rack for products, said dispenser comprising:

- (a) a plurality of vertically disposed panels, each of said panels having at least one rail extending horizontally therefrom toward an opposing vertical panel, said rail defining a chute therebetween, said chute being slightly greater in width than the width of said products so as to allow said products to be stored therein and dispensed therefrom;
- (b) said chute further being slightly inclined so as to allow said products to be advanced by means of gravity from an upper position on said panel in said chutes to a lower portion position on said panels in said chute;
- (c) a removal area disposed proximate said lower portion of said chute for allowing selective removal of one or more of the products from said dispenser;
- (d) a return area disposed above the return area for allowing replacement of one of said products on said dispenser after removal from said chute; and
- (e) an access door movable between first and second positions, said access door being mounted proximate said upper portion, said access door being constructed and arranged for closing the upper portion of said chute in the first position and for opening the upper portion of said chute in the second position, said access door further having a front face for advertising display purposes.

82. The dispensing and display device of claim 81 wherein the products are cylindrically shaped products including at least one of: cans and jars.

83. The dispensing and display device of claim 81 further comprising:  
a second rail extending horizontally therefrom toward an opposing vertical panel, said second rail defining a second chute therebetween, said second chute being slightly greater in width than the width of second products so as to allow said second products to be stored therein and dispensed therefrom, wherein the products and the second products are different.

84. The dispensing and display device of claim 83 wherein the differences in the products and second products is internal.

85. The dispensing and display device of claim 83 wherein the differences in the products and second products is external.

86. A dispensing and display device for products comprising:  
a pair of vertical panels and at least one serpentine chute formed therebetween, said chute being inclined relative to horizontal whereby products contained therein may be advanced by gravity towards the lower portion of said display device, said chute comprising a substantially C-shaped configuration; said chute having an upper portion and a lower portion;  
a stop means proximate to the lower portion of said chute for preventing further downward motion of said products in said chute; and

a return area located proximate said first and second chute for allowing replacement of one of said products on said display device after removal from said chute.

87. The dispensing and display device of claim 86 wherein the products are cylindrically shaped products including at least one of: cans and jars.

88. A method of packaging canned products for loading onto a display structure, comprising:

arranging the products in at least one row; and  
enclosing the row of products in a overwrap forming a loading magazine, having a tear strip disposed thereon along its periphery so as to create a removable portion of said overwrap from the remaining carrying portion of said loading magazine, said overwrap being sized, constructed and arranged for feeding said products along the direction of the row into the display structure when the removable portion is removed from said overwrap.

89. The method of claim 88, further comprising:  
removing said removable portion of said overwrap;  
aligning said row of products with a corresponding vacant area of the display structure; and  
feeding said products in a row into the display structure.

90. The method of claim 88 wherein the display structure is a standard shelf.